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Status Report on the Alaska King and Tanner Crab Fisheries

by
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and Lewis E. Queirolo

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STATUS REPORT ON THE ALASKA KING AND TANNER CRAB FISHERIES

by

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ABSTRACT

The king (*Paralithodes* spp. and *Lithodes aequispina*) and Tanner (snow) (*Chionoecetes* spp.) crab resources in the North Pacific and Bering Sea have gone from lightly harvested in the mid-1950s to being heavily exploited by over 800 domestic fishing vessels in the early 1980s. The total/king and Tanner crab catch hit a record 310 million pounds in 1988. Since then the crab stocks have declined dramatically and catches dropped to only 69 million pounds in 1984. Catches have increased for both king and Tanner crab in each of the next 3 years. This report describes the management of the king and Tanner crab fisheries and summarizes the biological condition of the crab resources in 1986-87 by management areas. Finally, the productivity of the crab fleets are analyzed by average catch and revenue per vessel for six length classes.

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INTRODUCTION

The king (Paralithodes spp. and Lithodes aequispina) and Tanner (snow) (Chionoecetes spp.) crab resources of the North Pacific and Bering Sea have, historically, represented an important and abundant source of high quality seafood. First exploited primarily by Japanese and Soviet distant-water fleets, the crab stocks of the North American continental shelf off Alaska, became one of the most valuable domestic fishery resources in the United States by the 1970s.

Explosive growth in demand for king and Tanner crab throughout the world prompted equally rapid expansion of both harvesting capacity and effort in the face of seemingly unlimited harvest opportunitites. One influential king crab fisherman publically declared with bravado that king crab were distributed 6 feet deep across the whole Bering Sea, and in his opinion, could never be overfished.

Successive highly profitable seasons induced even greater enthusiasm for accelerated expansion, until the demand for new state-of-the-art crab vessels outstripped the capacity of the Northwest shipyards to deliver them: Growth in the U.S. crab fleet peaked in 1981. By that time, more than 250 catcher boats, 15 floating processor vessels, and 12 catcher/processors comprised the fleet.

The North Pacific crab boom, like all economic booms, proved to be unsustainable. By 1980-81 the production peak was attained. In that fishing season, 188 million pounds of king crab and 122 million pounds of Tanner crab were landed (Tanner

crab landings actually peaked a year earlier at 132.7 million pounds). By the following year, the king crab catch had declined to less than 90 million pounds, then to 40 million pounds, then 28 million pounds and 19 million in the next 3 years. After hitting a low of 16.5 million pounds in 1985, the king crab catch has made a slight recovery in 1986 and 1987. Tanner crab catches exhibited a similar precipitous trend, falling to 101 million pounds in 1981, 72 million in 1982, 62.8 million in 1983, and 50.5 million in 1984. Tanner crab catches have subsequently increased in each of the next 3 years (Table 1).

The resource collapse was quickly followed by an equivalently dramatic and severe crisis in the domestic harvesting and processing sectors. Efforts to diversify into Tanner crab, C. opilio, a species which had previously been regarded as economically less desirable by domestic fishermen, or retrofitting for entry into the emerging groundfish fishery, were only partially successful, and only for a portion of the fleet as it had existed at the peak of the crab fishery.

The descriptive and statistical summary which follows characterizes the status of the U.S. domestic crab industry as it appears in 1987. It summarizes the catch/revenue performance of the fleet by different vessel length classes. In addition, a profile of the biological condition of the king and Tanner crab resource by fishery management area is provided, together with projections of near-term stock assessments. These projections are based upon the best available scientific information in mid-1987; however, in many regards these data are not complete.

Table 1.--King, Tanner (snow), and total crab catch, 1976-87, in thousand pounds and thousand dollars.

Year	King crab		Tanner crab		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
1976	106,037	67,904	80,824	16,034	186,861	83,938
1977	99,574	99,596	98,476	37,528	198,050	137,124
1978	122,921	155,863	129,808	56,699	252,729	212,562
1979	154,312	148,832	132,685	72,292	286,997	221,124
1980	187,750	174,344	122,139	62,611	309,889	236,955
1981	89,908	123,170	101,221	49,383	191,129	172,553
1982	40,241	106,613	71,967	82,865	112,208	189,478
1983	27,976	74,939	62,786	54,449	90,762	129,388
1984	18,903	43,673	50,539	36,005	69,442	79,678
1985	16,491	33,863	87,919	55,014	104,440	88,877
1986*	25,909	87,655	110,000	83,408	135,909	171,063
1987*	29,065	98,929	113,812	98,684	142,877	197,613

* Preliminary.

Source: Alaska 1985 Catch and Production, Stat. Leaf. No. 38, Alaska Dep. of Fish & Game, Div. Commer. Fish., P.O. 3-2000, Juneau, AK 99802, December 1986; Janet Smoker, Natl. Mar. Fish. Serv., Alaska Region, 709 West Ninth St., P.O. Box 21668, Juneau, AK 99802, Pers. commun., February 1988.

Therefore, the conclusions presented should be regarded as preliminary.

MANAGEMENT OF THE KING AND TANNER CRAB FISHERIES

The State of Alaska (State) has managed crab fisheries off its shores since statehood in 1959. The Alaska Board of Fisheries (Board) and Alaska Department of Fish and Game (ADF&G) are responsible for State management of the crab resources. The State made a substantial investment in facilities, communications, information systems, vessels, equipment, experienced personnel capable of carrying out extensive crab management, and biological research and enforcement programs.

In January 1977, the Secretary of Commerce (Secretary) adopted and implemented a Preliminary Fishery Management Plan (PMP) for the foreign king and Tanner (snow) crab fisheries in the eastern Bering Sea. Under the PMP, no foreign fishing for king crab was allowed and restictions were placed on the foreign Tanner crab fishery.

From 6 December 1978 until 1 November 1986, the Tanner crab fishery in the Exclusive Economic Zone off Alaska was managed under a Fishery Management Plan (FMP) for the commercial Tanner crab fishery off the coast of Alaska. The FMP was amended nine times, most recently on 12 September 1984. To achieve its conservation and management objectives and to effectively coordinate management with the State, the FMP adopted many of the management measures employed by the State. However, the FMP did not provide for management based on the best available scientific

information, or provide for timely coordination of management with the State. At its March 1986 meeting, the North Pacific Fishery Management Council (Council) voted to suspend the implementing regulations for the Tanner crab FMP. The Council, at its September 1986 meeting, appointed a Workgroup of both industry representatives and Council members to develop a comprehensive management approach for crab fisheries off Alaska. The Federal Tanner crab FMP was repealed at the request of the Council, first by emergency interim rule, and later by Secretarial amendment, effective 29 April 1987.

In October 1981, the Council and the Board adopted a joint statement of principles for the management of domestic king crab fisheries in the Bering Sea and Aleutian Islands area. This agreement formed the basis for the interim management during development of a Bering Sea and Aleutian Islands king crab FMP. Although the Federal regulations implementing framework provisions of the FMP became effective on 2 December 1984, actual implementation of management measures under the FMP was deferred pending acceptance of the delegation of authority by the Governor of Alaska. In a letter dated 20 June 1986, the Governor declined the delegation of authority. His principal objections to the delegation were excessive Federal oversight, uncertainties in the regulatory approval process, unnecessary governmental duplication, and concerns for the degree to which discretionary authority of the Board would be constrained. Therefore, both king and Tanner crab will be managed under State regulations until a new FMP is in place.

The State manages three species of king crab--red king crab, Paralithodes camtschatica, blue king crab, p. platyous, and brown king crab, Lithodes aequispina; two species of Tanner crab, Chionoecetes bairdi and C. opilio; and a hybrid Tanner crab, by management areas, districts, and sections.

STOCK ASSESSMENT

Following is a brief description of the history and future outlook for the many crab fisheries that occur off Alaska, based on recent reports to the State Board of Fisheries and National Marine Fisheries Service (NMFS) crab survey results.

Southeast-Yakutat

Red, blue, and brown king crab are harvested from this area (Koeneman and Inamura 1987). Red and blue king crab are generally taken in protected bays. Since the 1970-71 season, harvests have averaged about 436,000 pounds per season with an average of 35 vessels participating each year in this fishery. Brown king crab are taken from deeper waters. Since the 1970-71 season, harvests of brown king crab have averaged about 340,000 pounds per season. Until recently, relatively few vessels participated in this fishery. However, in the 1986-87 season approximately 82 vessels took part in the Southeast-Yakutat brown king crab harvest.

The Alaska Department of Fish and Game 1986 crab population survey results showed a continuing decline in all segments of the surveyed populations of red and blue king crab. The red king crab fishery was not opened during the 1986-87 fishing season due

to reduced stock conditions--the second consecutive season closure. Special openings were allowed for blue king crab during the Tanner crab season; however, the effort was low with a total catch of only about 1,000 pounds. There are two types of brown king crab fisheries, a traditional fishery and an exploratory fishery designed to help determine distribution and abundance limits of the stock. The total catch for the traditional fishery was 461,400 pounds in 1987, and the total catch was 310,400 for the 1986-87 exploratory fishery. As in the past, landings of king crab were minimal in the Yakutat portion of the area. Effective 1 January 1985, a limited entry program was established for all king crab fisheries in Southeast Alaska by the Alaska Commercial Fisheries Entry Commission (CFEC).

At the present time,, due to low stock abundance, it is unlikely that a commercial red king crab fishery will be allowed during the next two to four seasons. Blue king crab stocks are also at a low level with many crabs infested with a parasitic barnacle. Therefore, at most, only a small fishery in conjunction with other crab fisheries, is likely for the near future. The traditional brown king crab fishery has become a recruit fishery with little biological information available. The State indicates that it may manage this fishery more conservatively in the future. The exploratory brown king crab fishery does not appear to be fulfilling its intended purpose and, therefore, may be modified.

According to the State, the Southeast Alaska C. bairdi fishery has produced an average annual harvest of approximately

1.7 million pounds since the 1972-73 fishing season. The Yakutat C. bairdi fishery has averaged about 1.5 million pounds between the 1972-73 and the 1979-80 seasons. Harvests have declined since the peak harvest of 2.4 million pounds during the 1979-80 season. In recent years both the Southeast and Yakutat fisheries have shown a greater dependence on recruit size crab.

Southeast Alaska C. bairdi landings were reported to be approximately 1.2 million pounds for the 1986-87 season with 104 vessels registered. Product acceptability problems, first detected during the 1984-85 season, continued. The State determined that the cause of the problems was the result of a dinoflagellate infection which makes the meat of infected crab taste bitter.

Total landings for the Yakutat C. bairdi fishery are expected to reach 50,000 pounds for the 1986-87 season with eight vessels registered. Because only three vessels landed C. bairdi, landings for the 1986-87 season are confidential. A limited entry program for the Tanner crab pot fishery in Southeast Alaska and Yakutat will be implemented by the State in the near future. The use of ring gear has recently been increasing because it is not under a moratorium, set by the State on pot gear for both king and Tanner crab.

It is expected that the seasonal harvest in Southeast Alaska should fluctuate between about 750,000 and one million pounds in the near future. Seasonal harvest for Yakutat is expected to remain very low.

Prince William Sound

All three species of king crab are found in the Prince William Sound management area (Donaldson and Kimker 1987). The highest recorded harvest of 300,000 pounds occurred in 1972, and the lowest catch, 5,500 pounds occurred in 1965. The catch for a total of 11 landings for the 1986-87 season was 163 pounds for blue king crab and 65,674 pounds for brown king crab.

Recent ADF&G crab surveys indicate that red king crab stock abundance remains low. Therefore, no fishery is expected, at least until the condition of the stocks improves. The blue king crab fishery is also scheduled to remain closed for the 1987-88 season based on the poor 1986-87 season. A recovery of the stock is not expected for at least two more fishing seasons. The only fishery to open in 1987 was the brown king crab fishery. Reports by fishermen of moderate numbers of sublegal crab indicate that the stock should remain healthy for the immediate future. However, long-range production levels are unknown.

Chionoecetes bairdi Tanner crab fishing in Prince William Sound was first recorded by the State in 1968 with total landings of 1.2 million pounds. Peak harvests occurred during the 1972-73 season with a total harvest of 13.9 million pounds. Harvests decreased during the late 1970s and early 1980s with closures occurring during 1984 and 1985. The preliminary estimate of the 1987 harvest is approximately 0.5 million pounds.

A slight increase in recruitment is expected during 1987 based on the results of the 1986 ADF&G survey and the 1987 fishery. If the 1987 survey shows a stable or increasing

population of legal size crab, then another small fishery will most likely be allowed by the State in 1988.

Cook Inlet

A record catch of 8.6 million pounds of king crab was taken from Cook Inlet during the 1962-63 fishing season (Kimker and Hammarstrom 1987). Catches declined thereafter due to low population levels. During the 1982-83 and 1983-84 fishing seasons the State closed a portion of the management area. The entire area has been closed to king crab fishing since the 1984-85 fishing season. There appears to be little chance for significant improvement in the near future.

According to the State; the C. bairdi Tanner crab fishery reached a peak harvest of 8.0 million pounds during the 1973-74 fishing season. A catch within the range of approximately 2 to 3 million pounds has occurred since the 1980-81 fishing season. During the 1987 fishing season, approximately 2.5 million pounds were harvested by 95 vessels. The ADF&G conducted stock assessment surveys during 1987 to establish guideline harvest ranges for the 1988 fishery. Preliminary analysis by the State indicates that recruitment for 1988 should be similar to that of 1987 for the Kamishak, Outer and Eastern Districts, but may be lower in the Southern District.

'Dutch Harbor-Eastern Aleutians

In this area both red and brown king crab have been harvested (Nippes et al. 1987). The red king crab fishery in Dutch Harbor began in 1961 and Dutch Harbor rapidly became a major

production area. During the development years, the catch peaked at 32.9 million pounds. This occurred during the 1966-67 fishing season. The fishery has fluctuated widely since reaching its peak. The red king crab fishery has remained closed since the 1983-84 fishing season due to low population levels. The brown king crab fishery catch has averaged between 1 and 2 million pounds since the 1982-83 fishing season. During the 1986 fishing season, approximately l.9 million pounds was landed by 17 vessels.

An ADF&G crab pot population survey, conducted during August 1986, found no significant increase in the area's red king crab population with the stocks remaining severely depressed. The survey showed that few males are recruiting into an already depressed legal-sized male population. Very few juvenile female crabs were found to be present. The State therefore believes that current reproductive problems will most likely continue in the future. No significant increase in the total adult female population was found. The survey also found that 50% of the adult females had no eggs and that 40% were unbred adults, suggesting that there are insufficient numbers of males to complete mating. The status of stocks for brown king crab is unknown but appears to remain healthy as catches and quality of crab have remained consistent during the previous 4 years.

The State maintains that the Eastern Aleutians is a marginal habitat for C. bairdi. Commercial quantities are found in only a few bays and inlets. This fishery is very small, and although a record catch of 2.5 million pounds were taken during the 1977-78

season, the harvest has been less than one million pounds since the 1979-80 season. Less than 0.2 million pounds was landed by nine vessels during 1986.

The stock status is unknown, but the annual harvest is not expected to exceed 0.2 million pounds in the near future.

Adak-Western Aleutians

The Adak red king crab fishery started in 1961 with a harvest of two million pounds (Nippes et al. 1987). A peak harvest of 21 million pounds was then reached during the 1964-65 season. Catches were relatively stable from 1967-68 to 1972-73, when 14 to 18 million pounds were landed. The harvest then declined rapidly and the fishery was closed during the 1976-77 season. Catches since the 1976-77 season have remained low, never exceeding two million pounds. The preliminary catch estimate, by the State, for the 1986-87 season is approximately 0.7 million pounds. The brown king crab fishery began during the 1975-76 season as an incidental catch in the red king crab fishery. Catches of brown king crab remained low during the 1975-76 to the 1980-81 seasons. Since then, annual catches have increased from about one million pounds during the 1981-82 season to about 11.0 million pounds -during the 1985-86 season. The preliminary estimate of the brown king crab catch through 5 July 1987 is 11.3 million pounds.[3]

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[3]Preliminary Westward Region king crab catch, 5 July 1987. Available from Alaska Dep. Fish Game, Div. Commer. Fish., 211 Mission Road, Kodiak, AK 99615, 1 p.

The stock condition of red king crab is presently unknown, although average weight and catch per unit effort are similar to last year's fishery according to preliminary State records. Increased effort in the longline brown king crab fishery has reduced the catch of red king crab over the last few years. The brown king crab fishery is relatively new, and therefore, there is little information available on the stock condition.

The C. bairdi fishery in the Western Aleutians has been incidental to the king crab fishery. The 1986-87 fishing season was no exception. Nine vessels landed less than 40,000 pounds concurrent to the red king crab fishery. The abundance and stock status of C. bairdi are unknown, but seem to be concentrated in specific bays.

Chignik

Chionoecetes bairdi were first harvested-from Chignik in 1968 (Nippes et al. 1987). The fishery then remained at a low level until 1974 when 4.1 million pounds were landed. From 1974 through 1983, catches have fluctuated between 2.5 and 6.9 million pounds. The State trawl surveys indicate that recruitment would not be adequate to significantly increase the Chignik Tanner crab population for the next 2 to 3 years. The preliminary harvest total for the 1987 fishing season is 195,060 pounds.[4]

[4]Preliminary Westward Region Tanner crab catch, 28 June 1987. Available from Alaska Dep. Fish Game, Div. Commer. Fish., 211 Mission Road, Kodiak, AK 99615, 1 p.

South Peninsula

The red king crab fishery in South Peninsula began in 1947 and reached a peak harvest of 22.6 million pounds in 1966 (Nippes et al. 1987). Catches have declined steadily since that time due, in part, to poor recruitment. The fishery has remained closed since the 1983-84 season.

An ADF&G crab pot index survey, conducted in 1986, indicates that there has been no significant improvement in the South Peninsula king crab population. The population remains severely depressed and it appears unlikely that they will rebuild significantly in the near future.

The State has noted little interest in fishing for brown king crab in the South Peninsula area and no commercial quantities have been located. The stock status remains unknown.

The C. bairdi fishery began in 1967 in the South Peninsula area and reached a peak harvest of 11 million pounds, according to State records, during the 1975-76 season. Landings have been less than 4 million pounds since 1983.

The results of the 1986 ADF&G crab pot index survey showed a lower proportion of recruits and lower total population of Tanner crab available for the 1987 harvest. The preliminary estimate for the 1987 harvest is approximately 2.4 million pounds (Footnote 4).

Kodiak

The first recorded catch of red king crab from Kodiak occurred in 1950 (Nippes et al. 1987). The fishery reached a peak in 1966 when 177 vessels delivered 90 million pounds. The

average harvest from the 1960-61 season through the 1982-83 season was 24.8 million pounds. The red king crab fishery has been closed from the 1983-84 through the 1986-87 fishing seasons due to poor stock conditions. The red king crab stocks remain at critically low levels with no recruitment of any significance expected in the near future.

The first directed fishery in this area for brown king crab occurred in 1982. A preliminary estimate of the catch through 28 June 1987 is approximately 50,000 pounds (Footnote 3). There has been no stock assessment work conducted on Kodiak brown king crab, therefore, the stock size is unknown. Based on recent fisheries performance, the State believes that the resource is most likely small.

The State first recorded catches of C. bairdi from the Kodiak area in 1967. The harvest peaked in the 1977-78 season and declined through the 1980-81 season. The harvest for the 1981-82 season was 13.8 million pounds and increased to 18.9 million pounds in the 1982-83 season and then it declined. The preliminary estimate for the 1987 harvest is a record low of approximately 4.8 million pounds (Footnote 4). The Kodiak Tanner crab stocks are low, but have not experienced the total recruitment failures seen in the Kodiak king crab stocks.

Bering Sea and Aleutian Islands

The king crab fishery in the Bering Sea and Aleutian Islands (BS/AI) area has gone through rapid development in the last 25 years. After a short-lived small-scale American fishery in the late 1940s and 195Os, the Japanese reentered the fishery-in 1953

and the Soviets entered the fishery in 1958. During 1964, the United States arranged bilateral agreements with Japan and the U.S.S.R. The foreign fisheries were gradually supplanted by an entirely American fishery which has had more than enough capacity to harvest and process the total resource since the late 1960s. The foreign fisheries for king crab ceased in 1974, and those targeting Tanner crab ceased in 1980. The Bristol Bay red king crab fishery reached a peak harvest of 130 million pounds during the 1980-81 fishing season (Nippes et al. 1987). The stocks in Bristol Bay then underwent a very rapid decline with a total harvest of only about 3 million pounds harvested during the 1983-84 fishing season.

Due to a low abundance of males and a record low abundance of mature females, the ADF&G closed the Bristol Bay portion of the Bering Sea to red king crab fishing in 1983. The fishery was reopened in 1984. From 1985 to 1986, the abundance of legal males increased by 140%' according to the NMFS 1986 summer trawl survey, largely due to prerecruit growth (Stevens et al. 1986). This survey indicates a stable population of prerecruits and a small increase in the legal male population, although the entire population remains in a depressed status. The preliminary harvest estimate for the 1986-87 fishing season is approximately 11.4 million pounds, harvested by 159 vessels.

Blue king crab have been harvested from the Northern District of the Bering Sea (St. Matthew and St. Lawrence Islands) since 1977. A peak harvest of 9.5 million pounds was taken off St. Matthew Island in 1983. The annual harvest has declined in

recent years with a total catch of approximately one million pounds during 1986. Landings off St. Lawrence Island have been minimal with no reported catches since 1984. The NMFS 1986 survey indicates legal male abundance declined 64% over the past year, while prerecruit abundance remained stable. A continued decline in the legal population is expected.

Blue king crab are also harvested from the Pribilof District. The first reported catch of 1.3 million pounds occurred in 1973. The annual harvest reached a peak of 11 million pounds during the 1980-81 fishing season and then declined to only about 0.3 million pounds during the 1986-87 fishing season. The Pribilof stocks declined over 50% from 1985 to 1986, the estimate of the legal male abundance increased slightly and appears stable according to the NMFS 1986 survey.

Brown king crab also have been taken from the Northern District and from the Pribilof District. These are small fisheries, however, with no reported landings for the Northern District for the past 3 years and only 3,530 pounds reported from the Pribilof District for 1986. Little information is available on the status of these stocks.

The domestic Tanner crab fishery in the BS/AI area has undergone rapid development in recent years. Both C. bairdi and C. opilio are harvested in the Bering Sea and C. bairdi is harvested in the waters off the Aleutian Islands. The first reported catch of C. bairdi was 17,900 pounds taken incidental to the Bering Sea king crab fishery in 1968 according to State records. C. bairdi soon became a target species, and by 1976,

22.9 million pounds were landed from the BS/AI area. A Japanese fishery for C. opilio was displaced by a completely domestic fishery in 1981; The first reported catches of C. opilio occurred in 1978 with about 1.7 million pounds landed. As C. bairdi stocks declined, C. opilio harvests increased rapidly, and since 1980, C. opilio harvests have exceeded C. bairdi total harvests for the area.

The abundance of legal size male C. bairdi crabs has been declining since 1975 and is presently at a historic low. The NMFS 1986 survey indicates that over the past year, the abundance of legal crab declined by 30%, while prerecruits increased by 33%. A poor 1985 fishery with only 3.2 million pounds landed was a factor in prompting a closure of the fishery in 1986. Continued low abundance in 1986 led to another closure in 1987. Relationships between population estimates and catch rates appear to be poorly understood for this species. Analysis of the 1986 NMFS trawl survey showed that the C. opilio males remained stable relative to the 1985 survey. Also, large numbers of juvenile crab were found; however, these crab are several years from reaching exploitable size and it was not possible to predict their availability. Recruitment patterns are also poorly understood for C. opilio.

Norton Sound

A large vessel summer commercial king crab fishery has occurred in the area since 1977 (Lean and Merkouris 1987). The Norton Sound stocks have been monitored by several trawl surveys, pot assessment surveys, and winter studies since 1976. In 1976,

the population was largely composed of recruit and prerecruit crab. Crab abundance reached a peak of an estimated 11 million pounds of legal males in 1978. From 1979 to 1982, the population experienced very low recruitment and the abundance of legal crab dropped to an estimated 1.3 million pounds in 1982. Research surveys conducted by NMFS and ADFG during 1985, indicated that improved recruitment has resulted in a moderate increase in legal crab abundance. The State has reported catches taken during the summer fishery ranging from 2.9 million pounds in 1979 to 0.2 million pounds in 1982. In 1986, three vessels harvested 0.48 million pounds. A winter commercial fishery occurs through the ice. This is a very small fishery with less than 4,000 pounds sold during the past eight winters.

Red king crab are also taken through the ice by Norton Sound residents for recreational and subsistence purposes. The 1986 winter subsistence harvest from Nome was 7,052 king crab.

The 1987 commercial quota of 0.4 million pounds is slightly higher than the average catch of 378,000 pounds for the past 5 years. This State quota is based on the 1985 NMFS trawl survey which indicated a decline in recruitment for 1987.

PRODUCTIVITY OF THE KING AND TANNER CRAB FLEETS

Productivity, measured in terms of average catch and value per vessel, has been affected by changes in the abundance of king and Tanner crab and by associated changes in both ex-vessel prices and the number of vessels in these crab fisheries. This section presents information on productivity of the king crab fleet, the Tanner crab fleet, and the combined fleets. Productivity for subfleets, defined by vessel length classes is also presented.

Data from the Alaska Commercial Fisheries Entry Commission for 1978 through 1985 were used to calculate average catch and value per vessel. Catch refers to landings throughout this report. Data were not available for 1986, and therefore, this section describes the period of general decline prior to the recovery that began in 1986 and continued through 1987. Subfleets were defined for vessels under 50 feet, 50-74 feet, 75-99 feet, l00-124 feet, 125-149 feet, and 150-199 feet. Vessels for which length was not available were listed in an "unknown" category.

King Crab Fleet

Total Alaska king crab catch and revenues fell sharply from the record highs of 188 million pounds and $174 million in 1980 to 40 million pounds and $107 million in 1982. During this same period, average catch per vessel fell by 80%, but average revenue per vessel fell by only 44% as higher prices partially offset the lower catch (Table 2 and Fig. 1). The percentage decreases in

Table 2.--Productivity of Alaska king crab fishery, average catch in thousand pounds and average revenue in thousand dollars by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch per vessel								
Under 50'	21	25	36	34	15	6	12	9
50-74'	109	92	142	84	35	21	24	20
75-99'	420	334	350	161	70	71	68	64
100-124'	731	639	672	251	142	154	113	137
125-149'	682	462	578	285	158	164	147	198
150-199'	445	684	672	300	138	193	111	144
Unknown	170	220	353	109	32	54	17	96
All vessels	207	208	265	118	52	69	59	77
Revenue per vessel								
Under 50'	31	27	37	59	49	23	31	19
50-74'	155	97	144	133	110	63	60	43
75-99'	537	332	327	223	191	194	157	141
100-124'	910	623	621	322	344	425	263	284
125-149'	847	446	531	351	377	449	333	394
150-199'	552	669	616	368	323	542	262	362
Unknown	214	217	332	134	79	152	43	172
All vessels	266	206	249	164	139	191	140	162

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

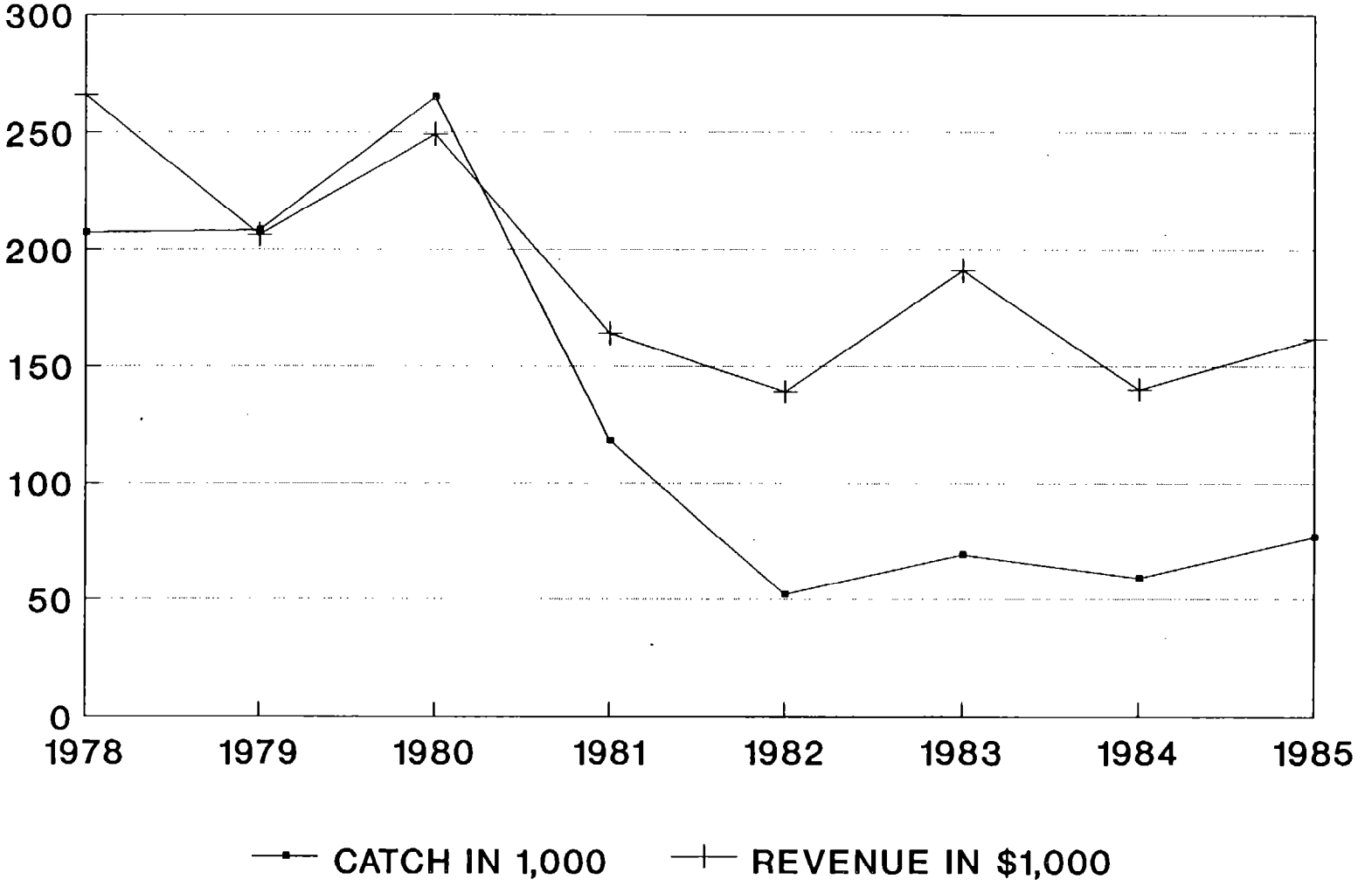

Figure l.--Average catch and revenue per vessel for the Alaska king crab fishery, 1978-85.

average catch and value per vessel exceeded those of total catch and value due to a 10% increase in the number of vessels. Since 1982, the total king crab catch continued to decline, but catch and revenue per vessel were higher in 1985 than in 1982 because the number of vessels participating in the fishery declined from 768 vessels in 1982 to 209 vessels in 1985 (Table 3).

Generally, catch and revenue per vessel are higher for larger vessels (Table 2 and Fig. 2). However, this occurred for all six classes in only 1981 and 1983. In other years, the ranking of the three largest classes differed. For these exceptions, other factors such as areas and days fished, and the numbers of pot lifts, outweighed vessel size in determining relative vessel productivity for the largest three vessel classes. In 1985, vessels in the 125-149 feet group led all others with a catch of 197,786 pounds and revenues of $393,786 per vessel. The 150-199 feet class was second in both catch and revenues, and the l00-124 feet class was third.

Catch and revenue were centered in the 75-99 feet and l00-124 feet classes with each of these two size classes accounting for about one-third of the total catch and revenue over the 1978-85 period (Table 4). When the 50,-74 feet and 125-149 feet size classes are also included, 84% of the catch and 57% of vessels are accounted for in 1985. Although the largest class of vessels, 150-199 feet, is ranked second in both catch and revenue per vessel, it contributed only 6.1% of the catch over the 1978-85 period and represented 2.4% of the vessels. At the other end, vessels under 50 foot comprised 37% of the vessels

Table 3.--Number of vessels in the Alaska king crab fishery, by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Under 50'	262	291	245	262	314	115	92	43
50-74'	107	112	113	140	136	52	34	20
75-99'	127	156	180	182	172	110	87	69
100-124'	45	73	91	89	78	68	58	48
125-149'	13	23	25	24	27	22	21	14
150-199'	12	18	19	19	13	13	9	4
Unknown	21	48	26	33	28	12	12	11
Total	587	721	699	749	768	392	313	209

Source: Based on data from Alaska Commerical Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Table 4.--Percentage of king crab catch, revenues, and number of vessels by length class, 1978-85 average in percentages.

Length	Catch	Revenues	Vessels
Under 50'	5.9	6.9	36.6
50-74'	7.7	8.5	16.1
75-99'	33.0	33.0	24.4
100-124'	32.4	31.4	12.4
125-149'	11.0	10.5	3.8
150-199'	6.1	6.0	2.4
Unknown	3.9	3.7	4.3
Total	100.0	100.0	100.0

Note: See Appendix Table A1 for annual 1978-85 data.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

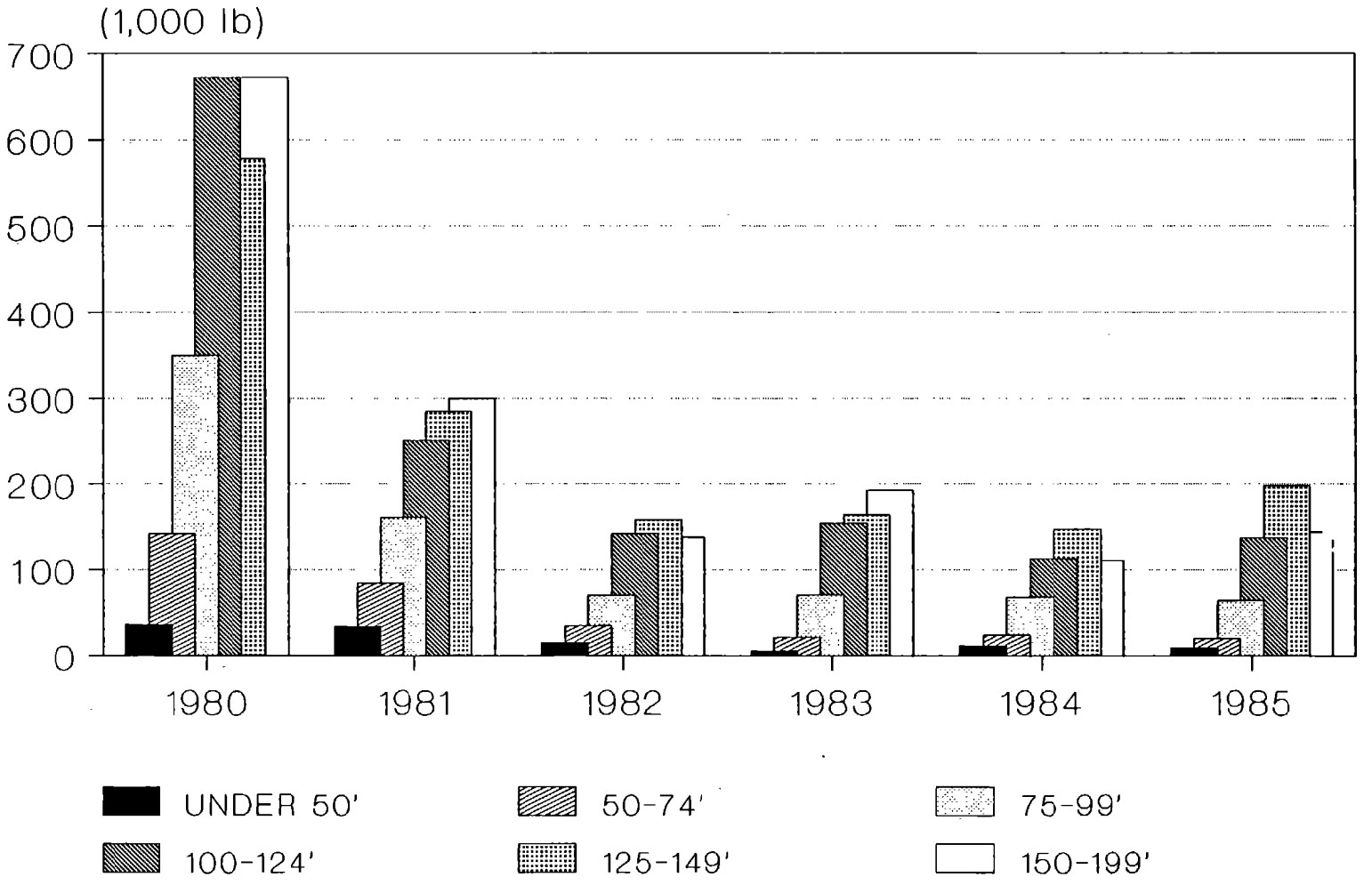

Figure 2.--King crab catch per vessel by length class, 1980-85.

but contributed only 5.9% of the catch.

Tanner Crab Fleet

The Tanner crab catch steadily declined from its peak in 1979 to 1984. This downward trend was reversed in 1985 with a 72% increase in the catch and a 50% increase in total revenues from 1984. Revenues, except for 1982, have declined at a much lower rate than the catch as higher prices have partially offset the lower catches. Average catch and revenue per vessel over the 1979-85 period reflected the trend in the total catch and revenues. From 1978 to 1984, the average Tanner crab catch fell 66%, while average revenues declined 45% (Table 5 and Fig. 3). Although average catch decreased each year, price increases in 1979 and 1982 resulted in increases in average and total revenues. The downward trends were reversed in 1985 due to the increased landings of C. opilio in the Bering Sea.

Despite the declines in productivity between 1979 and 1984, the number of vessels in the Tanner crab fleet did not decline until 1984 and 1985. There was a 20% drop in the number of vessels from 660 in 1983 to 529 in 1985 (Table 6).

The decline in productivity from 1979 to 1984 and the increase in 1985 was somewhat different among vessel length classes (Table 5). The downward trend in catch per vessel started a year later for vessels over 149 feet, and ended a year earlier for vessels over 74 feet. Both average catch and revenues were generally higher for larger vessel for sizes up to the l00-124 feet class (Fig. 4). For vessels over 125 feet, other factors such as areas fished, number of pots fished, and

Table 5.--Productivity of Alaska Tanner crab fishery, average catch in thousand pounds and average revenues in thousand dollars by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch per vessel								
Under 50'	79	61	55	40	31	25	23	23
50-74'	230	179	121	105	75	71	53	77
75-99'	455	367	334	257	194	160	169	357
100-124'	857	654	488	509	305	248	277	663
125-149'	400	390	382	314	196	150	255	1,724
150-199'	266	560	434	370	213	147	312	747
Unknown	103	139	157	76	94	103	82	54
All vessels	242	206	192	170	107	93	81	164
Revenue per vessel								
Under 50'	37	40	35	28	45	31	25	34
50-74'	105	112	76	66	112	80	60	86
75-99'	195	198	164	119	212	128	108	209
100-124'	359	314	227	223	308	190	146	324
125-149'	173	214	171	147	231	111	148	609
150-199'	115	255	186	190	263	157	163	255
Unknown	55	75	87	45	91	60	32	51
All vessels	106	113	99	85	126	82	58	104

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

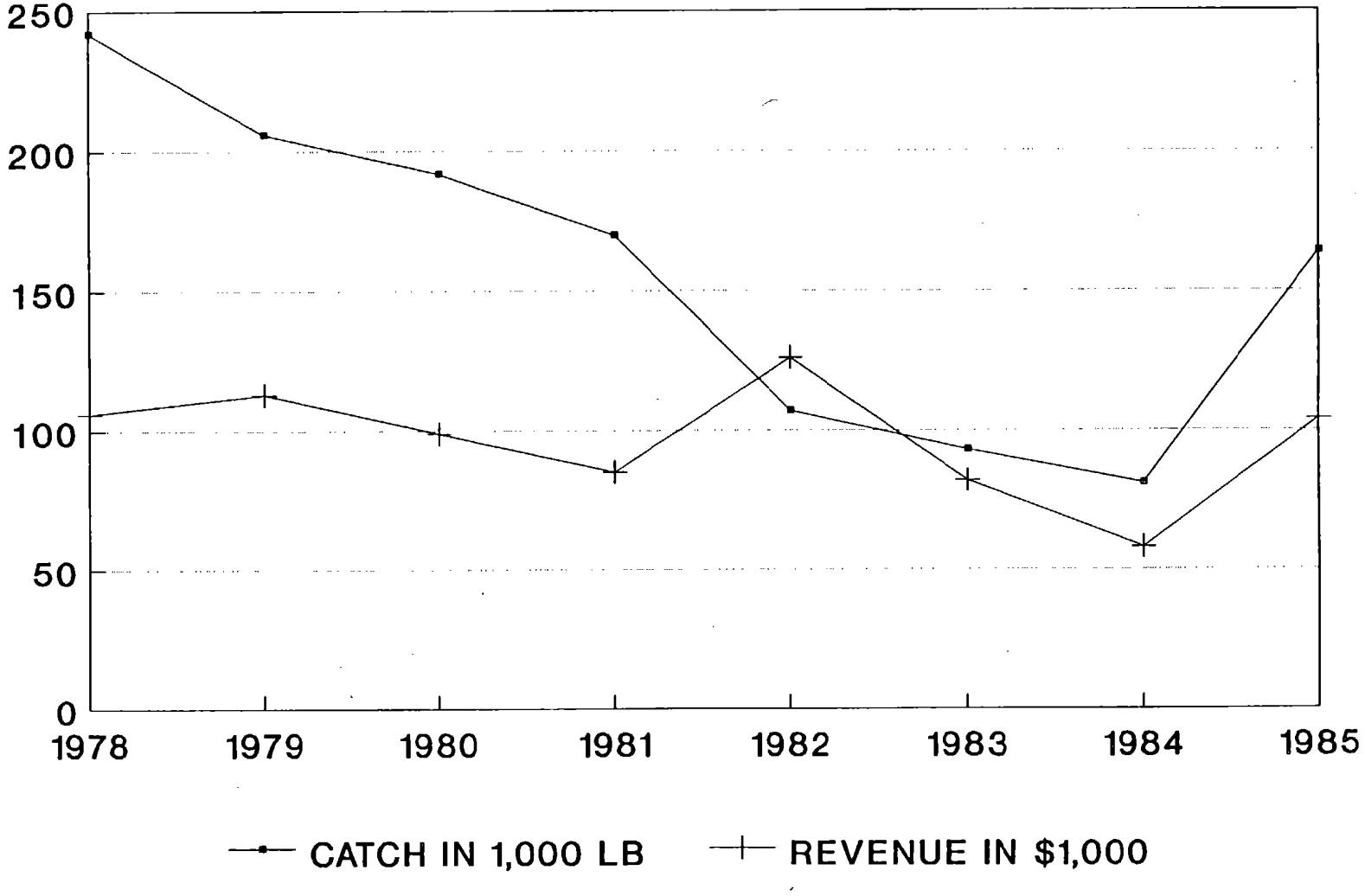

Figure 3.--Average catch and revenue per vessel for the Alaska Tanner crab fishery, 1978-85.

Table 6.--Number of vessels in the Alaska Tanner crab fishery by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Under 50'	251	283	259	228	290	278	321	283
50-74'	102	109	113	108	123	125	116	89
75-99'	112	131	133	137	143	149	101	91
100-124'	31	46	65	66	59	62	45	42
125-149'	9	7	16	13	13	20	9	5
150-199'	9	12	14	11	10	10	10	5
Unknown	21	52	35	19	21	16	14	14
All vessels	535	640	635	582	659	660	616	529

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

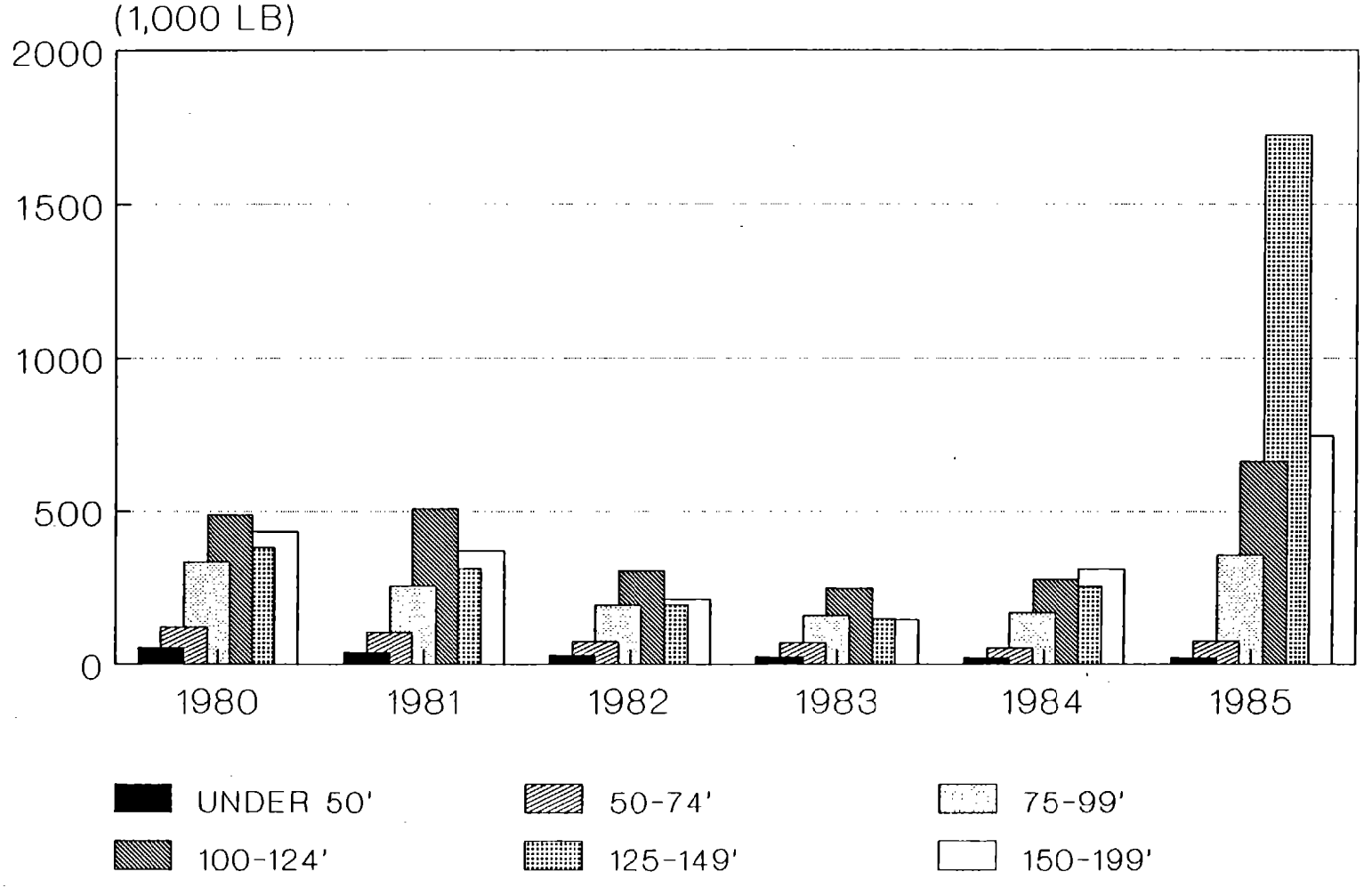

Figure 4.--Tanner crab catch per vessel by length class, 1980-85.

number of days fished were more important than length in determining productivity. Vessels in the l00-124 foot class had the highest average catch and revenue from 1978 to 1983, were ranked second in 1984, and third in 1985. In terms of average value, vessels over 150 feet were first in 1984 and were second or third the other 7 years. Over the 1978-85 period, the 125-149 foot group ranked third overall and was first in 1985 with a catch of 1.7 million pounds and revenue of $609,000 per vessel, an increase of 576% in the catch and 311% in revenue compared to 1984.

The percentages each length class contributed over the 1978-85 period to the total catch, total revenues, and number of vessels are shown in Table 7. The 75-99 foot class harvested 37% of the catch, followed by the l00-124 foot class with 26%, and they represented 20.5% and 8.6%, respectively, of the number of vessels. Although the 125-149 foot and 150-199 foot classes ranked high in vessel productivity, they each contributed no more than 5% of either total catch or revenues.

A notable difference between the percentage of the catch and revenue each class contributed was caused by the mix of higher-priced C. bairdi and lower-priced C. opilio. This can be seen in vessels greater than 75 feet. For vessels under 75 feet, each vessel class's share of revenue exceeded its share of catch, and the opposite was true for vessels larger than 75 feet. This was because smaller vessels were less likely to participate in the Bering Sea C. opilio fishery.

Table 7.--Percentage of Tanner crab catch, revenues, and number of vessels by length class, 1978-85 average in percentages.

Length	Catch	Revenues	Vessels
Under 50'	12.0	16.1	45.2
50-74'	13.2	16.4	18.2
75-99'	37.3	35.2	20.5
100-124'	26.1	22.4	8.6
125-149'	4.4	3.7	1.9
150-199'	4.0	3.4	1.7
Unknown	3.0	2.8	3.9
Total	100.0	100.0	100.0

Note: See Appendix Table A2 for annual 1978-85 data.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Combined King and Tanner Crab Fleet-

Between 1978 and 1982, approximately 60% of the crab fleet participated in both the king crab and the Tanner crab fisheries. In 1980, there were 699 vessels harvesting king crab and 635 vessels in the Tanner crab fishery with 500 vessels engaged in both fisheries for a total of 834 vessels. Since 1982, the number of vessels engaged in both fisheries have fallen off to under 30%, primarily due to the 73% decline in king crab fleet. Of the 584 vessels fishing in 1985, only 154 vessels (26%) fished in both fisheries (Table 8 and Appendix Table A4).

With the high rate of participation in both the king and Tanner crab fisheries from 1978 to 1982 and to a lesser degree from 1983 to 1985, the combined catches and revenues, and average catch and revenues provide a better picture of fishing operations. Activity in other fisheries, however, were not included.

The combined king and Tanner crab catch increased from 253 million pounds in 1978 to a record 310 million pounds in 1980. From 1980 to 1984, the combined catch declined by 78% to 69 million pounds, before increasing to 104 million pounds in 1985. The catch increased in 1986 and 1987 with the catch reaching 143 million pounds in 1987, the highest since 1981. Revenues followed similar patterns, except for 1982 when revenues increased as average prices reached record high levels.

Because 1986 and 1987 data on the number of vessels and catch by vessel class are not yet available, trends in the number of vessels and vessel productivity are discussed for 1978 through 1985. The number of vessels in the combined king and Tanner crab

Table 8.--Number of vessels in the Alaska king and Tanner crab fisheries by length class, 1978-85.*

Length	1978	1979	1980	1981	1982	1983	1984	1985
Under 50'								
King	262	291	245	262	314	115	92	43
Tanner	251	283	259	228	290	278	321	283
Total	328	367	333	319	395	359	350	293
50-74'								
King	107	112	113	140	136	52	34	20
Tanner	102	109	113	108	123	125	116	89
Total	115	130	132	149	152	142	124	92
75-99'								
King	127	156	180	182	172	110	87	69
Tanner	112	131	133	137	143	149	101	91
Total	131	164	187	187	176	161	130	107
100-124'								
King	45	73	91	89	78	68	58	48
Tanner	31	46	65	66	59	62	45	42
Total	45	73	92	89	80	72	64	53
125-149'								
King	13	23	25	24	27	22	21	14
Tanner	9	7	16	13	13	20	9	5
Total	13	23	26	24	27	23	22	14
150-199'								
King	12	18	19	19	13	13	9	4
Tanner	9	12	14	11	10	10	10	5
Total	12	18	19	20	13	14	12	5
Unknown								
King	21	48	26	33	28	12	12	11
Tanner	21	52	35	19	21	16	14	14
Total	35	73	45	41	37	26	20	20
Total								
King	587	721	699	749	768	392	313	209
Tanner	535	640	635	582	659	660	616	529
Total	679	848	834	829	880	797	722	584

* Total is exclusive of duplication.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

fleet grew from 679 vessels in 1978 to a peak of 880 vessels in 1982. Since 1982, the number fell to 722 vessels in 1984 and 584. vessels in 1985 (Table 8). The average catch and average revenue per vessel reflected the downward trend in the total catch and total revenue from 1980 to 1984 with an upturn in 1985 (Table 9 and Fig. 5). From 1980 to 1984, the average catch declined by 74% from 368,121 pounds in 1980 to 94,569 pounds in 1984, while, average revenues fell by 61% from $284,118 in 1980 to $110,357 in 1984. The average catch and revenue per vessel rebounded in 1985 to 176,450 pounds and $152,187, respectively.

Catch and revenues per vessel were generally higher for larger vessels, although for most years this did not occur for vessels over 125 feet. For catch per vessel, the l00-124 foot class was the highest in 1978 and 1980-83, and vessels in the 150-199 foot group led in 1979 and 1984-85 (Fig. 6). The rankings of revenues per vessel differed from those of catch per vessel by length class because of the wide range of prices received for king and Tanner crab, and because of the difference in the percentage of king and Tanner crab vessels in each vessel class. From 1978 to 1983, vessels in the l00-124 foot or 150-199 foot group had the highest revenue per vessel (Fig. 7). In 1984 and 1985, the 125-149 foot group was first in revenues, although the vessel class was third in 1984 and second in 1985 for catch per vessel. This came about because of the greater number of vessels harvesting king crab as only 9 of the 22 vessels in 1984 and 5 of 14 vessels in 1985 fished for Tanner crab.

Table 9.--Productivity of Alaska king and Tanner crab fisheries, average catch in thousand pounds and average revenues in thousand dollars by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch per vessel								
Under 50'	78	67	69	57	35	22	24	24
50-74'	305	228	225	155	93	70	56	79
75-99'	796	612	574	345	226	197	177	345
100-124'	1,321	1,051	1,010	628	363	359	297	649
125-149'	959	581	791	455	253	287	244	813
150-199'	644	1,058	992	489	301	284	343	862
Unknown	181	243	326	123	78	89	68	90
All vessels	369	332	368	226	125	111	95	176
Revenue per vessel								
Under 50'	53	52	55	69	72	32	31	36
50-74'	238	177	188	173	189	94	72	93
75-99'	687	474	431	304	359	251	189	268
100-124'	1,158	821	775	487	563	565	341	514
125-149'	966	512	616	430	489	526	379	611
150-199'	638	839	754	455	526	615	332	545
Unknown	161	196	259	129	112	107	49	130
All vessels	313	261	284	208	215	162	111	152

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

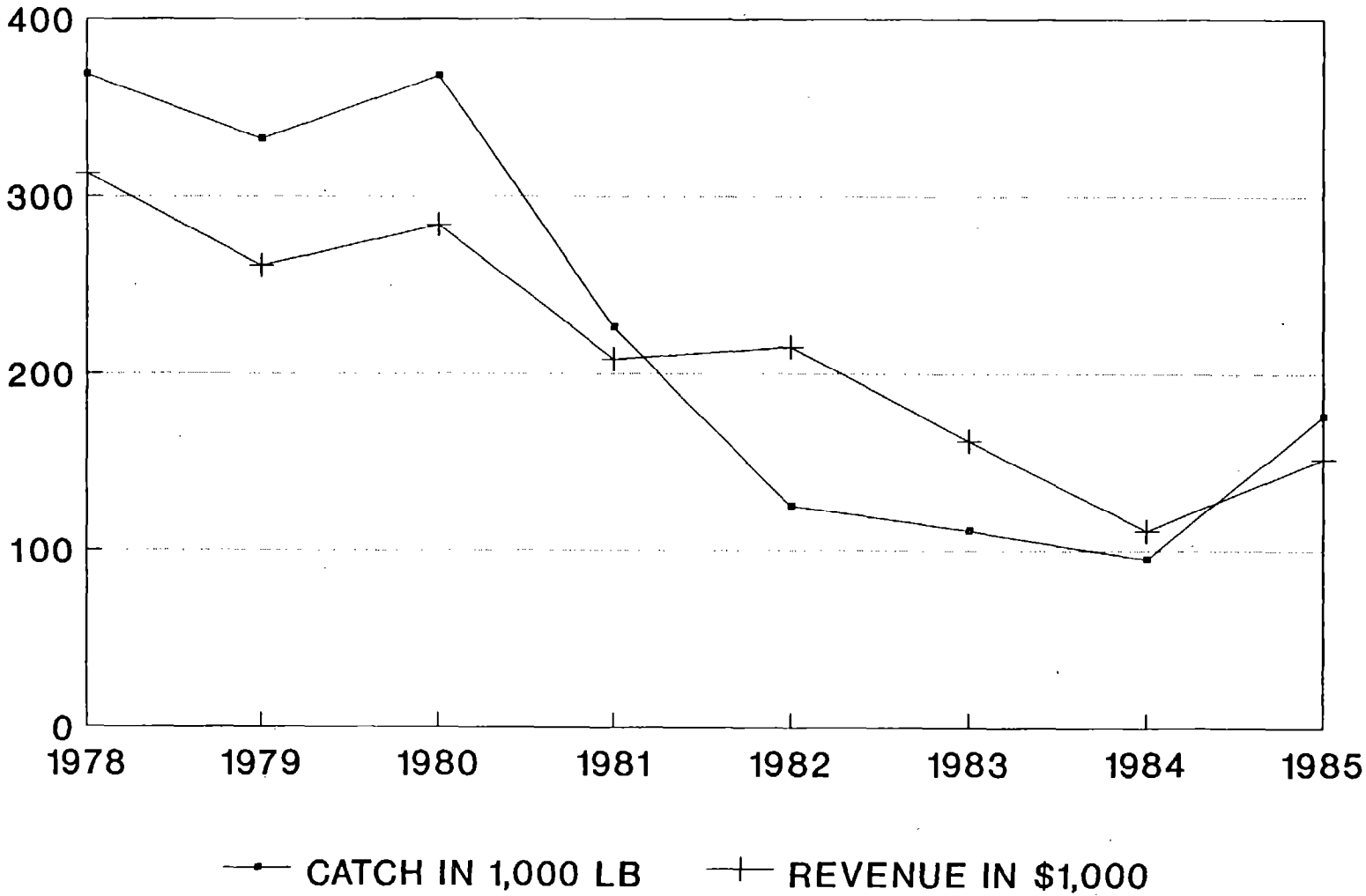

Figure 5.--Average catch and revenue per vessel for combined Alaska king and Tanner crab fisheries., 1978-85.

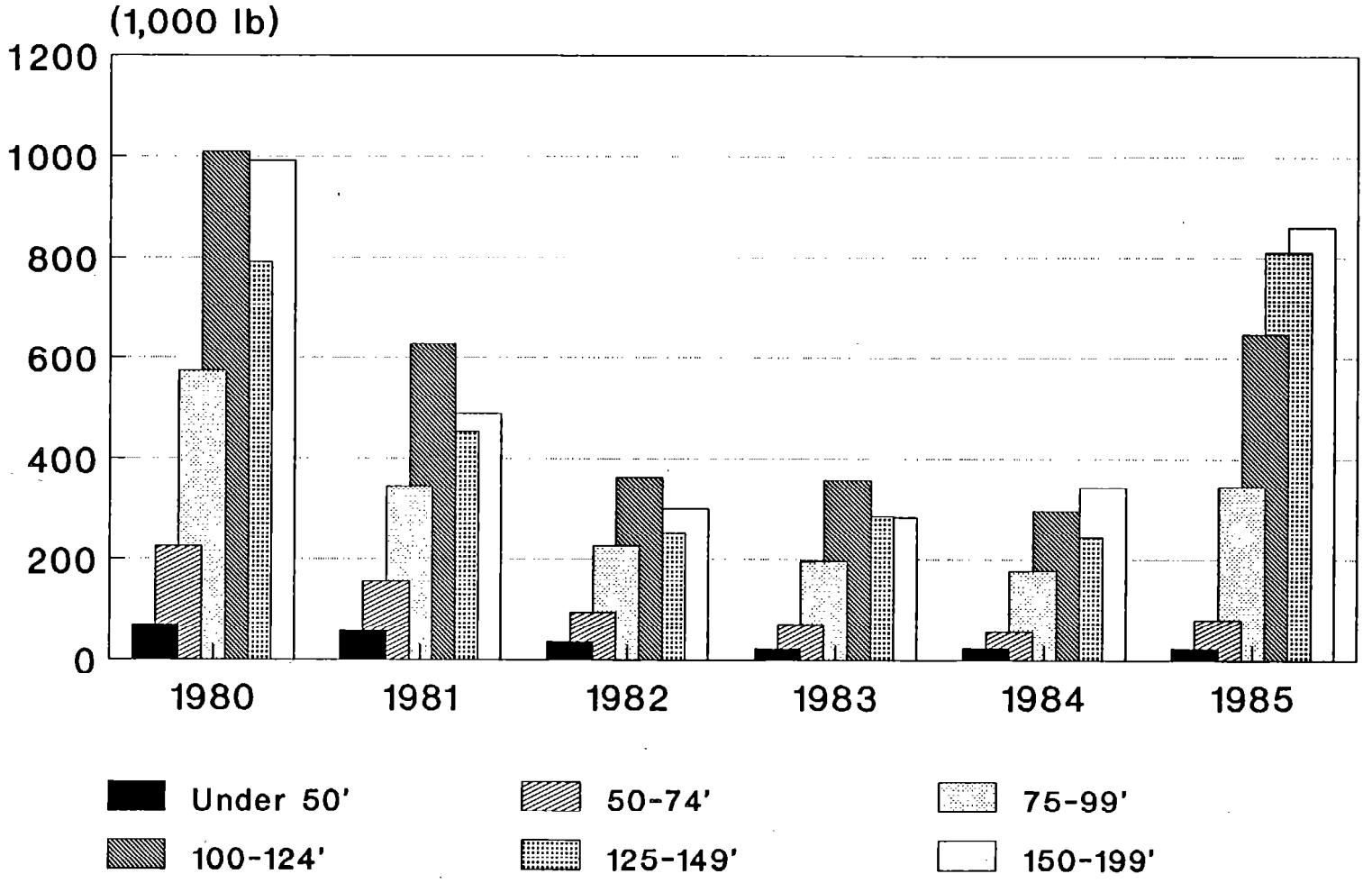

Figure 6. --Catch per vessel for combined Alaska king and Tanner crab fisheries by length class, 1980-85.

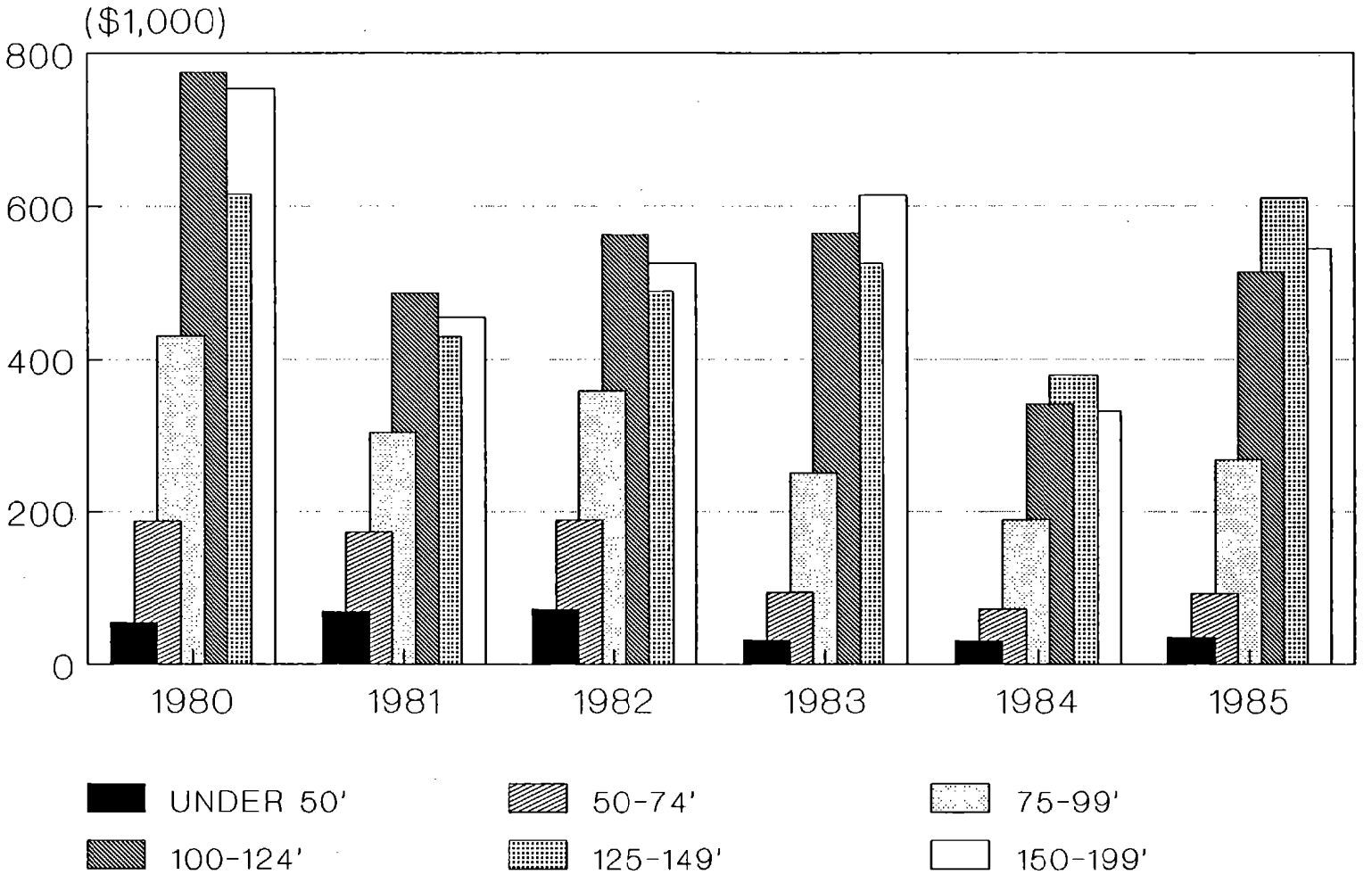

Figure 7.--Revenue per vessel for combined Alaska king and Tanner crab fisheries by length class, 1980-85.

The percentage each length class in the combined king and Tanner crab fishery contributed to the catch and revenue fell between those of the two fisheries. In the combined fishery, the catch was heaviest in the 75-99 foot group followed by the l00-124 foot group with an average of 36% and 28.8%, respectively over the 1978-85 period (Table 10). By comparison, the percentages for the king crab fishery for the same two vessel classes were 33% and 32.4%, respectively, and 37.3% and 26.1% for the Tanner crab fleet (Table 11).

Table 10.--Percentage of combined king and Tanner crab catch, revenues, and number of vessels by length class, 1978-85 average.

Length	Catch	Revenues	Vessels
Under 50'	9.6	10.8	44.5
50-74'	11.0	11.9	16.8
75-99'	36.0	34.0	20.1
100-124'	28.5	27.5	9.2
125-149'	6.8	7.6	2.8
150-199'	4.9	5.0	1.8
Unknown	3.2	3.2	4.8
Total	100.0	100.0	100.0

Note: See Appendix Table A3 for annual 1978-85 data.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Table 11.--Comparison of catch of king crab, Tanner crab, and combined catch by vessel length class, 1978-85 average in percentages.

Length	King	Tanner	Combined
Under 50'	5.9	12.0	9.6
50-74'	7.7	13.2	11.0
75-99'	33.0	37.3	36.0
100-124'	32.4	26.1	28.5
125-149'	11.0	4.4	6.8
150-199'	6.1	4.0	4.9
Unknown	3.9	3.0	3.2
Total	100.0	100.0	100.0

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

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APPENDIX

Table A1.--Percentage of catch, revenue, and vessels by length class in the Alaska king crab fishery, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch								
Under 50'	4.6	4.8	4.8	10.2	12.1	2.8	5.8	2.5
50-74'	9.6	6.8	8.6	13.3	12.1	4.1	4.3	2.5
75-99'	44.0	34.9	33.9	33.1	30.4	28.9	31.6	27.2
100-124'	27.1	31.1	33.0	25.2	27.9	39.0	35.3	40.6
125-149'	7.3	7.1	7.8	7.7	10.7	13.4	16.5	17.1
150-199'	4.4	8.2	6.9	6.4	4.5	9.4	5.4	3.6
Unknown	3.0	7.1	5.0	4.1	2.3	2.4	1.1	6.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Revenue								
Under 50'	5.1	5.4	5.3	12.6	14.4	3.6	6.5	2.4
50-74'	10.7	7.3	9.3	15.2	14.0	4.4	4.7	2.6
75-99'	43.7	34.8	33.7	32.9	30.8	28.5	31.2	28.6
100-124'	26.3	30.5	32.4	23.2	25.2	38.5	35.0	40.2
125-149'	7.1	6.9	7.6	6.8	9.6	13.2	16.0	16.3
150-199'	4.2	8.1	6.7	5.7	3.9	9.4	5.4	4.3
Unknown	2.9	7.0	5.0	3.6	2.1	2.4	1.2	5.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Vessels								
Under 50'	44.6	40.4	35.0	35.0	40.9	29.3	29.4	20.6
50-74'	18.2	15.5	16.2	18.7	17.7	13.3	10.9	9.6
75-99'	21.6	21.6	25.8	24.3	22.4	28.1	27.8	33.0
100-124'	7.7	10.1	13.0	11.9	10.2	17.3	18.5	23.0
125-149'	2.2	3.2	3.6	3.2	3.5	5.6	6.7	6.7
150-199'	2.1	2.5	2.7	2.5	1.7	3.3	2.9	1.9
Unknown	3.6	6.7	3.7	4.4	3.6	3.1	3.8	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Table A2.--Percentage of catch, revenue, and vessels by length class in the Alaska Tanner crab fishery, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch								
Under 50'	15.3	13.1	11.6	9.3	12.8	11.5	15.0	7.5
50-74'	18.1	14.9	11.3	11.5	13.1	14.4	12.3	7.9
75-99'	39.4	36.5	36.5	35.6	39.3	39.1	34.4	37.5
100-124'	20.5	22.8	26.1	33.9	25.4	25.1	25.1	32.0
125-149'	2.8	2.1	5.0	4.1	3.6	4.8	4.6	9.9
150-199'	1.8	5.1	5.0	4.1	3.0	2.4	6.3	4.3
Unknown	2.1	5.5	4.5	1.5	2.8	2.7	2.3	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Revenue								
Under 50'	16.3	15.6	14.5	13.0	15.8	16.1	22.7	17.6
50-74'	18.9	16.8	13.7	14.4	16.6	18.4	19.3	14.0
75-99'	38.6	35.9	34.8	32.9	36.5	35.1	30.3	34.5
100-124'	19.6	20.0	23.6	29.9	22.0	21.7	18.3	24.8
125-149'	2.7	2.1	4.4	3.9	3.6	4.1	3.7	5.5
150-199'	1.8	4.2	4.2	4.2	3.2	2.9	4.5	2.3
Unknown	2.1	5.4	4.8	1.7	2.3	1.7	1.2	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Vessels								
Under 50'	49.6	44.2	40.8	39.2	44.0	42.1	52.1	53.5
50-74'	19.1	17.0	17.8	18.6	18.7	19.0	18.8	16.8
75-99'	20.9	20.5	21.0	23.5	21.7	22.6	16.4	17.2
100-124'	5.8	7.2	10.2	11.3	8.9	9.4	7.3	7.9
125-149'	1.7	1.1	2.5	2.2	2.0	3.0	1.5	1.0
150-199'	1.7	1.9	2.2	1.9	1.5	1.5	1.6	1.0
Unknown	3.9	8.1	5.5	3.3	3.2	2.4	2.3	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Table A3.--Percentage of catch, revenue, and vessels by length class in the combined Alaska king and Tanner crab fisheries, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Catch								
Under 50'	10.1	8.7	7.5	9.7	12.5	8.8	12.4	6.8
50-74'	14.0	10.6	9.7	12.3	12.7	11.3	10.1	7.0
75-99'	41.6	35.6	35.0	34.5	36.1	36.0	33.7	35.8
100-124'	23.7	27.3	30.2	29.8	26.3	29.3	27.9	33.4
125-149'	5.0	4.7	6.7	5.8	6.2	7.5	7.9	11.0
150-199'	3.1	6.8	6.1	5.2	3.6	4.5	6.0	4.2
Unknown	2.5	6.3	4.8	2.7	2.6	2.6	2.0	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Revenue								
Under 50'	8.1	8.7	7.7	12.7	15.0	8.8	13.8	11.8
50-74'	12.9	10.4	10.5	14.9	15.1	10.3	11.3	9.6
75-99'	42.3	35.2	34.0	32.9	33.3	31.3	30.8	32.3
100-124'	24.5	27.1	30.1	25.1	23.8	31.4	27.4	30.7
125-149'	5.9	5.3	6.8	6.0	7.0	9.3	10.5	9.6
150-199'	3.6	6.8	6.0	5.3	3.6	6.7	5.0	3.1
Unknown	2.7	6.5	4.9	3.1	2.2	2.2	1.2	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Vessels								
Under 50'	48.3	43.3	39.9	38.5	44.9	45.0	48.5	50.2
50-74'	16.9	15.3	15.8	18.0	17.3	17.8	17.2	15.7
75-99'	19.3	19.4	22.4	22.6	20.0	20.2	18.0	18.3
100-124'	6.6	8.6	11.1	10.7	9.1	9.0	8.9	9.1
125-149'	1.9	2.7	3.1	2.9	3.0	2.9	3.0	2.4
150-199'	1.8	2.1	2.3	2.4	1.5	1.8	1.6	0.9
Unknown	5.2	8.6	5.4	4.9	4.2	3.3	2.8	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.

Table A4.--Percentage of vessels in the Alaska king crab, Tanner crab, and both fisheries compared to the total number of crab vessels by length class, 1978-85.

Length	1978	1979	1980	1981	1982	1983	1984	1985
Under 50'								
King	79.9	79.3	73.6	82.1	79.5	32.0	26.3	14.7
Tanner	76.5	77.0	77.8	71.5	73.4	77.4	91.7	96.6
Both	56.4	56.4	51.4	53.6	52.9	9.5	18.0	11.3
50-74'								
King	93.0	86.2	85.6	94.0	89.5	36.6	27.4	21.7
Tanner	88.7	83.3	85.6	72.5	80.9	88.0	93.5	96.7
Both	81.7	70.0	71.2	66.4	70.4	24.6	21.0	18.4
75-99'								
King	96.9	95.1	96.3	97.3	97.7	68.3	66.9	64.5
Tanner	85.5	79.9	71.1	73.3	81.2	92.5	77.7	85.0
Both	82.4	75.0	67.4	70.6	79.0	60.9	44.6	49.5
100-124'								
King	100.0	100.0	98.9	100.0	97.5	94.4	90.6	90.6
Tanner	68.9	63.0	70.7	74.2	73.8	86.0	70.3	79.2
Both	68.9	63.0	69.6	74.2	71.2	80.6	60.9	69.8
125-149'								
King	100.0	100.0	96.2	100.0	100.0	95.7	95.5	100.0
Tanner	69.2	30.4	61.5	54.2	48.2	87.0	40.9	35.7
Both	69.2	30.4	57.7	54.2	48.2	92.6	36.4	35.7
150-199'								
King	100.0	100.0	100.0	95.0	100.0	93.9	75.0	100.0
Tanner	75.0	66.7	73.7	55.5	76.9	71.4	83.3	80.0
Both	75.0	66.7	73.7	50.0	76.9	64.3	58.3	80.0
Unknown								
King	60.0	65.8	57.5	80.5	75.7	46.2	60.0	55.0
Tanner	60.0	71.2	77.8	46.3	56.8	61.5	70.0	70.0
Both	20.0	37.0	35.6	26.8	32.4	7.7	30.0	25.0
Total								
King	86.5	85.0	83.8	90.3	87.3	49.2	43.4	35.8
Tanner	78.8	75.5	76.1	70.2	74.9	82.8	85.3	90.6
Both	65.2	60.5	60.0	60.6	62.2	32.2	28.7	26.4

Computed from data in Table 8.

Source: Based on data from Alaska Commercial Fisheries Entry Commission, Pouch KB, Juneau, AK 99811.